Optical Data Transmission Apparatus And Method

Abstract

In a system for transmitting intensity modulated light waves (20) over an optical fiber (18), an optical data transmission apparatus (10) includes a cw laser (12) conformed to emit light at substantially a single frequency. A phase modulator (14) is connected in series with the cw laser (12), wherein the phase modulator (14) is conformed to cause the light from the cw laser (12) to vary in substantially a quadratic manner as a function of time during a time interval T. An intensity modulator (16) is connected in series with the phase modulator (14), wherein the intensity modulator (16) is conformed to transmit or block the light from the phase modulator (14) in accordance with an intensity modulation scheme for transmitting binary data, such that the transmitted light consists of pulses (22) of temporal width T during which the phase of the light varies in substantially a quadratic manner as a function of time.

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